

IN THE CLAIMS:

Claims 1, 3-9, 11-17, 21, 22, and 24-32 are amended herein.

Kindly, add new Claims 33-77 for consideration.

All of the resulting pending Claims 1-77 are presented below with the amended versions thereof presented in strikeout-and-underline format. The following presentation of claims replaces all prior versions and presentation of claims in the above-captioned application.

1. (Currently Amended) A method for remediating an explosive device, if the explosive device once installed at a predetermined detonation site fails to detonate as intended, said method comprising the steps:

- (a) forming a quantity of an explosive material into an explosive device;
- (b) identifying microorganisms capable of bioremediating said explosive material;
- (c) shaping a quantity of said microorganisms into an aggregation~~aggregations~~ having a form selected from the group consisting of a pellet, a capsule, a shard, a flake, a granule, a powder, and a clump;
- (d) positioning said ~~aggregations~~ aggregation in such proximity to said quantity of said explosive material that, ~~if said explosive device fails to detonate as intended, when said~~ quantity of said microorganisms in said ~~aggregation~~aggregations ~~deactive said explosive device by commencing~~ is mobilized, said microorganisms in said quantity thereof commence bioremediation of said quantity of said explosive material; and

(e) ~~placing the~~ said explosive device at ~~a~~ the predetermined detonation site, whereby ~~said explosive material is bioremediated~~ if said explosive device fails to detonate as intended, when said quantity of said microorganisms is mobilized, said microorganisms therein deactivate said explosive device by bioremediating said quantity of said explosive material *in situ* at said detonation site.

2. (Original) A method as recited in Claim 1, wherein said step of forming occurs before said step of positioning.

3. (Currently Amended) A method as recited in Claim 2, wherein said step of positioning comprises the step of depositing said ~~aggregations~~ aggregation on ~~an exposed~~ a surface of said explosive material exposed in said explosive device.

4. (Currently Amended) A method as recited in Claim 2, wherein said step of forming comprises the step of disposing said quantity of said explosive material in a shell, and ~~wherein~~ said shell enables water from the exterior of said shell to flow ~~through~~ into said shell ~~into~~ and contact ~~with~~ said quantity of said explosive material disposed therein.

5. (Currently Amended) A method as recited in Claim 4, wherein said step of positioning comprises the step of depositing said ~~aggregations~~ aggregation on ~~a~~ an exposed surface of said quantity of said explosive material disposed in said shell.

6. (Currently Amended) A method as recited in Claim 4, wherein said shell is porous; ~~and said step of positioning comprises the step of embedding said aggregations in said shell.~~

7. (Currently Amended) A method as recited in Claim 4, wherein said step of positioning comprises the step of locating said aggregation in ~~inserting into~~ a recess in an exposed surface of said quantity of said explosive material disposed in said shell ~~a longitudinal core of said aggregations.~~

8. (Currently Amended) A method as recited in Claim 1, wherein said quantity of said explosive material in said explosive ~~apparatus~~ device is porous.

9. (Currently Amended) A method as recited in Claim 1, further comprising the step of ~~mixing wherein~~ a surfactant ~~is mixed~~ with said quantity of said explosive material.

10. (Original) A method as recited in Claim 1, wherein said step of positioning occurs before said step of forming.

11. (Currently Amended) A method as recited in Claim 10, wherein said step of positioning comprises the step of ~~dispersing~~ embedding ~~said aggregations~~ aggregation in said quantity of said explosive material.

12. (Currently Amended) A method as recited in Claim 10, further comprising the step of introducing ~~thermal~~ a thermal protective ~~additives~~ additive into said ~~aggregations~~ aggregation.

13. (Currently Amended) A method for remediating an explosive device, if the explosive device once installed at a predetermined detonation site fails to detonate as intended, said method comprising the steps:

- (a) forming a quantity of an explosive material into an explosive device;
- (b) identifying microorganisms capable when mobilized of bioremediating said explosive material;
- (c) housing a quantity of said microorganisms in a bioremediation apparatus;
- (d) coupling said bioremediation apparatus to said explosive device; and
- (e) placing the explosive device with said bioremediation apparatus coupled thereto at ~~a~~ the predetermined detonation site, whereby ~~said explosive material is bioremediated~~ if said explosive device fails to detonate as intended, when said quantity of said microorganisms is mobilized, said microorganisms therein deactivate said explosive device by bioremediating said quantity of said explosive material *in situ* at said detonation site.

14. (Currently Amended) A method as recited in Claim 13, wherein said step of forming comprises the step of disposing said quantity of said explosive material in a shell, and wherein said step of coupling affords access by said quantity of said microorganisms in said bioremediation apparatus to the interior of said shell ~~enables water from the exterior of said shell to flow through said shell into contact with~~ and said quantity of said explosive material disposed therein.

15. (Currently Amended) A method as recited in Claim 14, wherein said shell ~~has~~ comprises:

(a) an open end, said bioremediation apparatus becoming secured in said open end of said shell in said step of coupling;

(b) a capwell ~~positioned at said open end,~~ end of said shell; and

(c) a bioremediation portal formed through said capwell communicating ~~with~~ between said explosive material in said shell and said bioremediation apparatus, when said bioremediation apparatus is coupled to said explosive device.

16. (Currently Amended) A method as recited in Claim 13, wherein said bioremediation apparatus comprises:

(a) storage means for releasably containing said quantity of said microorganisms;
and

(b) divider means for selectively releasing said quantity of said microorganisms from said storage means into contact with said quantity of said explosive material in said explosive device, when said bioremediation apparatus is coupled to said explosive device.

17. (Currently Amended) A method as recited in Claim 16, wherein said divider means comprises a removable barrier ~~between said microorganisms and said quantity of said explosive material when said bioremediation apparatus is coupled to said explosive device.~~

18. (Original) A method as recited in Claim 17, wherein said barrier is removable mechanically.

19. (Original) A method as recited in Claim 17, wherein said barrier is removable electrically.

20. (Original) A method as recited in Claim 17, wherein said barrier is removable chemically.

21. (Currently Amended) A method as recited in Claim 16, wherein said bioremediation apparatus further comprises:

(a) reservoir means for releasably containing a quantity of a liquid capable of mobilizing said quantity of said microorganisms; and

(b) separation means for selectively releasing said quantity of said liquid from said reservoir means into said storage means.

22. (Currently Amended) A method as recited in Claim 13, wherein said bioremediation apparatus comprises:

(a) reservoir means for releasably containing a quantity of a liquid capable of mobilizing said quantity of said microorganisms;

(b) storage means for releasably containing said quantity of said microorganisms, said storage means being in selective communication with said reservoir means;

(c) first valve means for releasing said quantity of said liquid from said reservoir means into said storage means in ~~the~~ an open condition of said first valve means; and

(d) second valve means for releasing said quantity of said microorganisms ~~and from said storage means with said quantity of said liquid into contact with said quantity of said explosive material in said explosive—apparatus device,~~ when said ~~explosive bioremediation~~ apparatus is coupled to said explosive device.

23. (Original) A method as recited in Claim 22, wherein said first valve means and said second valve means are operably interconnected.

24. (Currently Amended) A method for remediating an explosive device, if the explosive device once installed at a predetermined detonation site fails to detonate as intended, said method comprising the steps:

- (a) selecting an explosive material from which to form an explosive device;
- (b) identifying microorganisms capable of bioremediating said explosive material;
- (c) dispersing a quantity of said microorganisms in a quantity of said explosive material, thereby ~~forming~~ producing a quantity of an explosive mixture with bioremediating capacity;
- (d) forming said quantity of said explosive mixture into an explosive device; and
- (e) placing ~~the~~ said explosive device at ~~a~~ the predetermined detonation site, whereby ~~said explosive material is bioremediated~~ if said explosive device fails to detonate as intended, when said quantity of said microorganisms is mobilized, said microorganisms therein deactivate said explosive device by bioremediating said quantity of said explosive material *in situ* at said detonation site.

25. (Currently Amended) A method as recited in Claim 24, further comprising the step of shaping said quantity of said microorganisms into aggregations ~~having a form selected from the group consisting of a pellet, a capsule, a shard, a flake, a granule, a powder, and a clump.~~

26. (Currently Amended) A method as recited in Claim 24, 25, wherein further comprising the step of dehydrating said quantity of said microorganisms ~~are dehydrated.~~

27. (Currently Amended) A method as recited in Claim 24, 25, ~~wherein further comprising the step of freeze drying said quantity of said microorganisms are freeze dried.~~

28. (Currently Amended) A method as recited in Claim 25, ~~wherein said aggregations further comprise~~ further comprising the step of introducing a thermal protection additive into said aggregations.

29. (Currently Amended) A method as recited in Claim 24, wherein said quantity of said explosive mixture in said explosive apparatus device is porous.

30. (Currently Amended) A method as recited in Claim 24, ~~further comprising wherein~~ said step of forming comprises the step of disposing said quantity of said explosive mixture in a shell, and wherein said shell enables water from the exterior of said shell to flow through into said shell into and contact with said quantity of said explosive mixture disposed therein.

31. (Currently Amended) A method as recited in Claim 30, 29, wherein said shell is porous.

32. (Currently Amended) A method as recited in Claim 24, wherein said microorganisms are among a microorganism consortium identified at the American Type Culture Collection by ATCC Designation No. ~~555784~~ 55894.

33. (New) A method as recited in Claim 30, wherein said shell has an open end.
34. (New) A method as recited in Claim 30, wherein a hole is formed through said shell.
35. (New) A method as recited in Claim 25, wherein said aggregations have a form selected from the group of forms consisting of a pellet, a capsule, a shard, a flake, a granule, a powder, and a clump.
36. (New) A method as recited in Claim 24, further comprising the step of mixing a surfactant with said quantity of said explosive material.
37. (New) A method as recited in Claim 24, wherein said microorganisms are selected from a group of microorganisms consisting of *Pseudomonas* spp., *Escherichia Coli*, *Morganella Morganii*, *Rhodococcus* spp., *Comamonas* spp., and dentrifying bacteria.
38. (New) A method as recited in Claim 24, wherein said microorganisms are selected from a group of microorganisms consisting of microorganisms in *Pseudomonas* spp. consisting of *aeruginosa*, *fluorescens*, *acidovorans*, *mendocina*, and *cepacia*.

39. (New) A method as recited in Claim 24, wherein said explosive material is selected from a group of explosive materials consisting of organic nitroaromatic explosives, organic nitramine explosives, and organic nitric ester explosives.

40. (New) A method as recited in Claim 24, wherein said explosive material is selected from a group of explosive materials consisting of trinitrotoluene, hexanitrostilbene, hexanitroazobenzene, diaminotrinitrobenzene and triaminotrinitrobenzene, cyclotrimethylene trinitramine, cyclotetramethylene tetranitramine, nitroguanidine, 2,4,6-trinitrophenylmethylnitramine, pentaerythritol tetranitrate, nitroglycerine, and ethylene glycol dinitrate.

41. (New) A method as recited in Claim 13, wherein said microorganisms are selected from a group of microorganisms consisting of microorganisms in *Pseudomonas* spp. consisting of *aeruginosa*, *fluorescens*, *acidovorans*, *mendocina*, and *cepacia*.

42. (New) A method as recited in Claim 13, further comprising the step of shaping said quantity of said microorganisms into an aggregation having the shape of a doughnut.

43. (New) A method as recited in Claim 13, further comprising the step of shaping said quantity of said microorganisms into an aggregation having the shape of a block.

44. (New) A method as recited in Claim 13, wherein said quantity of said microorganisms is suspended in a liquid.

45. (New) A method as recited in Claim 1, wherein said aggregations have a form selected from the group of forms consisting of a pellet, a capsule, a shard, a flake, a granule, a powder, and a clump.

46. (New) A method as recited in Claim 1, wherein said microorganisms are among a microorganism consortium identified at the American Type Culture Collection by ATCC Designation No. 55784.

47. (New) A method as recited in Claim 1, further comprising the step of mixing a surfactant with said quantity of said explosive material.

48. (New) A method as recited in Claim 1, wherein said microorganisms are selected from a group of microorganisms consisting of *Pseudomonas* spp., *Escherichia Coli*, *Morganella Morganii*, *Rhodococcus* spp., *Comamonas* spp., and denitrifying bacteria.

49. (New) A method as recited in Claim 1, wherein said microorganisms are selected from a group of microorganisms consisting of microorganisms in *Pseudomonas* spp. consisting of *aeruginosa*, *fluorescens*, *acidovorans*, *mendocina*, and *cepacia*.

50. (New) A method as recited in Claim 1, wherein said explosive material is selected from a group of explosive materials consisting of trinitrotoluene, hexanitrostilbene, hexanitroazobenzene, diaminotrinitrobenzene and triaminotrinitrobenzene, cyclotrimethylene trinitramine, cyclotetramethylene tetranitramine, nitroguanidine, 2,4,6-trinitrophenylmethylnitramine, pentaerythritol tetranitrate, nitroglycerine, and ethylene glycol dinitrate.

51. (New) A method as recited in Claim 1, further comprising the step of dehydrating said quantity of said microorganisms.

52. (New) A method as recited in Claim 1, further comprising the step of freeze drying said quantity of said microorganisms.

53. (New) A method as recited in Claim 1, wherein said step of positioning comprises the steps:

- (a) housing said quantity of said microorganisms in a bioremediation apparatus;
- and
- (b) coupling said bioremediation apparatus to said explosive device.

54. (New) A method as recited in Claim 53, further comprising the step of shaping said quantity of said microorganisms into an aggregation having the shape of a doughnut.

55. (New) A method as recited in Claim 53, further comprising the step of shaping said quantity of said microorganisms into an aggregation having the shape of a block.

56. (New) A method as recited in Claim 6, wherein said step of positioning comprises the step of embedding said aggregation in said shell.

57. (New) A method as recited in Claim 4, wherein said shell has an open end.

58. (New) A method as recited in Claim 4, wherein a hole is formed through said shell.

59. (New) A method as recited in Claim 7, wherein said step of positioning comprises the step of embedding said aggregation in said quantity of said explosive material deposited in said shell.

60. (New) A method as recited in Claim 1, wherein as a result of said step of forming and said step of positioning, said aggregation comes to be located in proximity to the portion of said explosive device configured to receive a detonator for said explosive device.

61. (New) A method as recited in Claim 1, further comprising the step of introducing a thermal protective additive into said aggregation.

62. (New) A method for remediating an explosive device, if the explosive device once installed in a predetermined detonation site fails to detonate as intended, said method comprising the steps:

- (a) forming a quantity of an explosive material into an explosive device;
- (b) identifying microorganisms capable of bioremediating said explosive material;
- (c) positioning a quantity of said microorganisms in such proximity to said quantity of said explosive material that, when said microorganisms are mobilized, said microorganisms in said quantity thereof commence bioremediation of said quantity of said explosive material; and
- (d) placing said explosive device at the predetermined detonation site, whereby if said explosive device fails to detonate as intended, when said quantity of said microorganisms is mobilized, said microorganisms therein deactivate said explosive device by bioremediating said quantity of said explosive material *in situ* at said detonation site.

63. (New) A method as recited in Claim 62, further comprising the step of shaping said quantity of microorganisms into aggregations.

64. (New) A method as recited in Claim 63, wherein said aggregations have a form selected from the group of forms consisting of a pellet, a capsule, a shard, a flake, a granule, a powder, and a clump.

65. (New) A method as recited in Claim 62, wherein said step of positioning comprises the step of depositing said aggregations on a surface of said explosive material exposed in said explosive device.

66. (New) A method as recited in Claim 62, wherein said step of forming comprises the step of disposing said quantity of said explosive material in a shell, and said shell enables water from the exterior of said shell to flow into said shell and contact said quantity of said explosive material disposed therein.

67. (New) A method as recited in Claim 66, wherein said shell is porous, and said step of positioning comprises the step of embedding said aggregations in said shell.

68. (New) A method as recited in Claim 62, wherein as a result of said step of forming and said step of positioning, said aggregations come to be located in proximity to the portion of said explosive device configured to receive a detonator for said explosive device.

69. (New) A method as recited in Claim 66, wherein said shell has an open end.

70. (New) A method as recited in Claim 66, wherein a hole is formed through said shell.

71. (New) A method as recited in Claim 66, wherein said step of positioning comprises the step of inserting said aggregations into a recess in an exposed surface of said quantity of said explosive material disposed in said shell.

72. (New) A method as recited in Claim 62, wherein said step of positioning comprises the step of dispersing said quantity of said microorganisms in said quantity of said explosive material, thereby producing a quantity of an explosive mixture with bioremediating capacity.

73. (New) A method as recited in Claim 62, further comprising the step of dehydrating said quantity of said microorganisms.

74. (New) A method as recited in Claim 62, further comprising the step of freeze drying said quantity of said microorganisms.

75. (New) A method as recited in Claim 62, further comprising the step of mixing a surfactant with said quantity of said explosive material.

76. (New) A method as recited in Claim 62, wherein said microorganisms are selected from a group of microorganisms consisting of *Pseudomonas* spp., *Escherichia Coli*, *Morganella* *Morganii*, *Rhodococcus* spp., *Comamonas* spp., and dentrifying bacteria.

77. (New) A method as recited in Claim 62, wherein said microorganisms are selected from a group of microorganisms consisting of microorganisms in *Pseudomonas* spp. consisting of *aeruginosa*, *fluorescens*, *acidovorans*, *mendocina*, and *cepacia*.